Avocent™

DSR

Installer/User Guide

DSR1161

DSR2161

DSR4160

INSTRUCTIONS

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

DANGEROUS VOLTAGE

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

POWER ON

This symbol indicates the principle on/off switch is in the on position.

POWER OFF

This symbol indicates the principle on/off switch is in the off position.

PROTECTIVE GROUNDING TERMINAL

A terminal which must be connected to earth ground prior to making any other connections to the equipment.

DSR

Installer/User Guide

Avocent, the Avocent logo and “The Power of Being There” are trademarks of Avocent Corporation. OSCAR is a registered trademark of Apex Inc. All other marks are trademarks or registered trademarks of their respective owners.

© 2001 Avocent Corporation. All rights reserved.

USA Notification

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Canadian Notification

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

Japanese Notification

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Agency Approvals

UL 1950, CSA C22. 2 No. 950, EN60950, IEC 950
FCC part 15A, EN55022, EN50082

Republic of Korea EMI Standard Certificate Number: E-F900-01-2012 (A)

Contents

Chapter 1 – Product Overview

Features and Benefits 3
Safety Precautions 4

Chapter 2 – Installation

Getting Started 9
Installing the DSR Unit 10
Installing the DSAuthentication Service 13
Installing DSAdmin 14
Installing DSView 14
Adding a DSR to your system 15
Configuring Host PCs 16
Configuring DSAdmin 16

Chapter 3 – Basic Operations

Basic Operations/Terminology 21
Keyboard Macros 23
Using the Session Window 24

Chapter 4 – Advanced Operations

Changing the System Settings 29
Altering Authentication Server Settings 29
Altering DSView Settings 31
Macro Groups 34
Changing Cursor Settings 35
Adjusting Video Parameters 35

Chapter 5 – Local Port Operation

Controlling your System at the Local Port 41
Viewing and Selecting Ports and Servers 41
Configuring OSCAR 44
Resetting your Keyboard and Mouse 50
Displaying Version Information 51

Chapter 6 – Terminal Operations

Accessing the Terminal Menu 55

Appendices

Appendix A: FLASH Upgrades 61
Appendix B: Technical Specifications 62
Appendix C: Technical Support 63
Appendix D: TCP Ports 64

CHAPTER 1

Product Overview

Contents

DSR Overview - Features 3

Safety Precautions 4

Chapter 1 – Product Overview

Features and Benefits

Avocent's DSR combines analog and digital technology to provide flexible, centralized control of data center servers. This solution provides enterprise customers with a significant reduction of cable volume, secure remote access and flexible server management from *anywhere at anytime*.

The DSR consists of a rack-mountable KVM switch configurable for analog or digital connectivity. Models currently available include the DSR1161, the DSR2161 and the DSR4160. Each DSR model has 16 input ports and provides enhanced video quality of 1280 x 1024 for digital users (up to 10 meters) and 1600 x 1280 for the local user.

The DSR works over standard LAN connections. Up to four simultaneous users can access servers across a 100BaseT Ethernet connection or directly through a local port on the DSR for digital KVM and administration, depending on the model selected. The IP-based DSR appliance gives you flexible server management control from anywhere in the world.

Model DS1161: 1 Remote User and 1 Local User
Model DS2161: 2 Remote Users and 1 Local User

Model DS4160: 4 Remote Users (no Local User)

Reduce cable bulk

With server densities ever increasing, cable bulk remains one of the major concerns of every network administrator. The DSR significantly relieves KVM cable volume in the rack by utilizing the innovative DSRIQ cable and single CAT 5 cabling. This allows you higher server density while providing greater airflow and cooling capacity. The DSRIQ cable is powered directly from the server and provides Keep-alive functionality whether or not the DSR unit is powered up.

Access the DSR via network connection

No special software or drivers are required on the attached, or Host, computers. Users access the DSR unit and all attached systems via Ethernet from a PC running the DSView application. This software resides on the user PC. User

PCs can be located anywhere a valid network connection exists. The DSR unit can be configured on a separate network from your data network, allowing access to your servers even if your applications network is down.

DSView provides simple point and click access to any server

When a user connects, the DSView application will display a listing of all computers and serial devices to which the user has permission to access. When a user selects a computer from the list, the video of the selected computer is displayed in the program window. Multiple servers can be accessed by one user. Each additional computer's video will appear in a separate program window.

DSAdmin and DSAuthentication Service create and manage user permissions with DES encrypted security

An administrator describes the configuration of computers attached to the DSR using an application called DSAdmin. Once the topology is described, the administrator then establishes which computers a user has permission to access. Usernames and passwords are derived from Windows NT, eliminating the need for redundant user databases. Once the topology is established, the DSAuthentication Service software manages the system's user permissioning. DSView polls the server for access permissions on power-up and every time a switch is initiated for the most current permissions possible. A refresh is also available for immediate updates to a user's access profile. In addition to the permissioning function, the DSAuthentication Service also stores pertinent information about attached devices in a database. Room location, rack location and computer type can all be stored for quick reference.

Safety Precautions

ENGLISH

To avoid potential video and/or keyboard problems when using Avocent products, ensure that the computer and monitor are on the same phase if the building has 3-phase AC power. For best results, they should be on the same circuit.

To avoid potentially fatal shock hazard and possible damage to equipment, please observe the following precautions:

- Do not use a 2-wire power cord in any Avocent product configuration.
- Test AC outlets at computer and monitor for proper polarity and grounding.
- Use only with grounded outlets at both the computer and monitor. When using a backup power supply (UPS), power the computer, the monitor and the DSR unit off the supply.

NOTE: The AC inlet is the main disconnect.

Rack Mount Safety Considerations

- Elevated Ambient Temperature: If installed in a closed rack assembly, the operation temperature of the rack environment may be greater than room ambient. Use care not to exceed the rated maximum ambient temperature of the unit.
- Reduced Air Flow: Installation of the equipment in a rack should be such that the amount of airflow required for safe operation of the equipment is not compromised.
- Mechanical Loading: Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- Circuit Overloading: Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of circuits might have on overcurrent protection and supply wiring. Consider equipment nameplate ratings for maximum current.
- Reliable Earthing: Reliable earthing of rack-mounted equipment should be maintained. Pay particular attention to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

CHAPTER 2

Installation

Contents

Getting Started 9

Installing the DSR Unit 10

Installing the DSAuthentication Service 13

Installing DSAdmin 14

Installing DSView 14

Adding a DSR to the System 15

Configuring Host PCs 16

Configuring DSAdmin 16

Chapter 2 – Installation

The DSR system requires that the DSView, DSAdmin and DSAuthentication Service software be installed prior to use. DSView is the application that allows a user to view and control a server attached to the DSR system. DSAdmin is used to configure and maintain the system. DSAuthentication is a Windows NT or 2000 service used to prevent unauthorized access to the DSR system.

NOTE: The local port, on models DSR1161 and DSR2161, does not require the DS software for operation. The local port uses OSCAR, Avocent's on-screen configuration and activity reporting interface. For more information, see *Chapter 5*.

The DSR system uses Ethernet networking infrastructure and TCP/IP protocol to transmit keyboard, video and mouse information between operators and connected computers. Although 10BaseT Ethernet may be used, Avocent recommends a dedicated, switched 100BaseT network.

Getting Started

Before installing your DSR, refer to the list below to ensure you have all items that shipped with the DSR as well as other items necessary for proper installation.

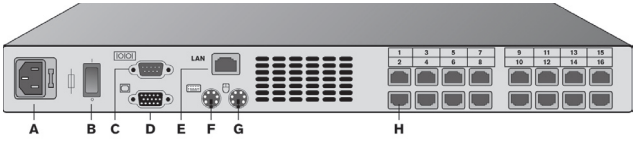
Supplied with the DSR

- DSR Unit
- Local country power cord
- Rack mounting brackets
- Null modem cable
- DSR Installer/User Guide and Software CD
- DSR Quick Install

Additional items needed

- One DSRIQ cable per server
- One CAT 5 patch cable per server (up to 10 meters)

The DSR unit



LEGEND	
A	Power Connector
B	Power Switch
C	Configuration Port
D	Video for local user (1161 and 2161 only)
E	LAN Connection (for Remote Users) 1 user on the DS1160, 2 users on the DS2161 and 4 users on the DS4160)
F	Keyboard for local user (1161 and 2161 only)
G	Mouse for local user (1161 and 2161 only)
H	Server connection ports

Verification of Ethernet/computer connections

The front panel of the DSR features two LEDs describing the Ethernet connection. The top LED is the *Link* indicator. It will illuminate when a valid connection to the network is established and blink when there is activity on the port. The lower amber LED, labeled 100Mbps, will indicate that you are communicating at the 100Mb rate.

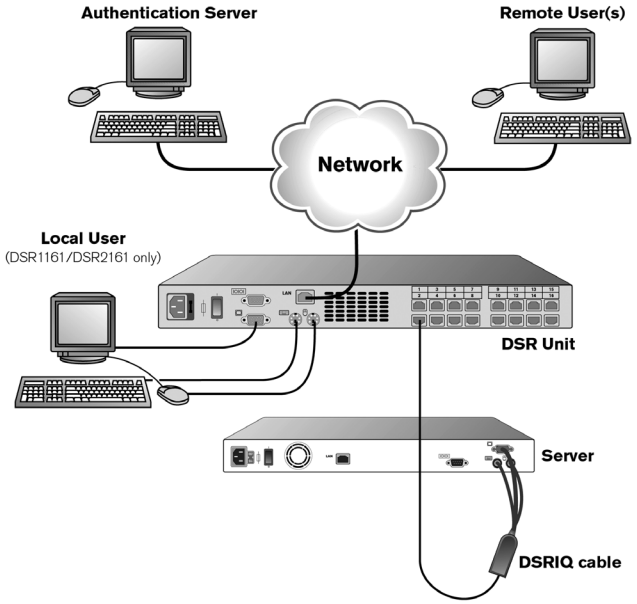
Additionally, there are two LEDs above each port number on the front of your unit: one green and one amber. The green LED will illuminate when the attached system is powered-on. The amber LED will illuminate when that port is selected by the DSView Client.

Setting up your network

The DSR system uses IP addresses to uniquely identify the DSAuthentication Server, the DSR units and the computers running DSView. The DSR supports both bootP (a subset of DHCP) and Static IP addressing. Avocent recommends that IP addresses be reserved for each unit and that they remain static while the DSR units are connected to the network. For additional information on how the DSR uses the TCP protocol, see *Appendix D*.

Installing the DSR Unit

Follow the lettered and numbered instructions below to successfully install your DSR unit. The figure below illustrates one possible configuration.

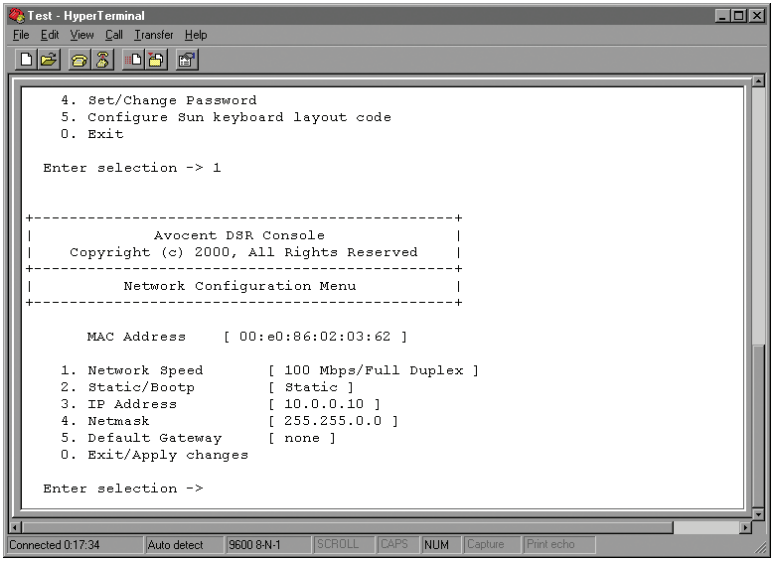


A. To install the DSR hardware

1. Remove the DSR unit from the packing material.
2. Connect a terminal or PC running terminal emulation software (such as HyperTerminal) to the Configuration Port on the back panel of the DSR using the supplied null-modem cable. The terminal should be set to 9600 baud, 8 bits, 1 stop bit, no parity, no flow control.
3. Plug the supplied power cord into the back of the DSR unit and then into an appropriate power source.
4. When the power is switched on, the Power indicator on the front of the unit will blink for approximately 30 seconds while performing a self-test. Approximately 10 seconds after it stops blinking, press the **Enter** key to access the main menu.

B. To configure the DSR hardware

1. You will see the Terminal Applications menu with six options. Select Option 1, Network Configuration.



2. Select Option 1 to set your network speed. When possible, you should set your connection manually without relying on the auto negotiate feature. Once you enter your selection, you will be returned to the Network Configuration menu.
3. Select Option 2 and specify if you are using a static or bootP IP address. Avocent recommends using a static IP address for ease of configuration. If you are using a bootP address, please configure your bootP server to provide an IP address to the DSR, and skip to procedure C.
4. Select options 3-5 from the Terminal application menu in turn to finish

configuring your DSR for IP Address, Netmask and Default Gateway. Once this is completed, type a **0** to return to the Main menu.

C. To adjust the mouse acceleration

NOTE: We highly recommend that all Windows systems attached to the DSR use the default Windows PS/2 mouse driver.

Before a PC running Windows NT or 2000 can be connected to the DSR, an adjustment to mouse acceleration must be made. Follow the steps below.

For Windows NT (using default drivers):

1. From the Desktop, select Start - Settings - Control Panel – Mouse.
2. Click on the *Motion* tab.
3. Set the pointer speed to slow. This will also need to be done for any NT user account that will be accessing the NT system through the DSR.

For Windows 2000:

1. From the Desktop, select Start - Settings - Control Panel - Mouse.
2. Click on the *Motion* tab.
3. Set the Acceleration setting to none and the speed setting to the default of 50%.

D. To connect a DSRIQ cable to each server

1. Locate the DSRIQ cables for your DSR unit.
2. Attach the appropriately color-coded cable ends to the keyboard, monitor and mouse ports on the first server you will be connecting to this DSR unit.
4. Attach one end of the CAT 5 cabling that will run from your DSRIQ to the DSR unit to the RJ45 connector on the DSRIQ cable.
5. Connect the other end of the CAT 5 cable to the desired port on the back of your DSR unit.
6. Repeat this step for all servers you wish to attach.

NOTE: Power down the DSR unit before servicing. Always disconnect the power cord from the wall outlet.

E. To connect the local port keyboard, monitor and mouse

(1161 and 2161 models only)

Attach your keyboard, monitor and mouse cable connectors to the appropriate ports on the back of your DSR unit.

F. To connect and power up your DSR

1. Connect your network cable from the LAN port on the rear of the DSR to your network.
2. Then power up all attached systems.

NOTE: Your software registration key will be necessary for all installations. Internet Explorer 5.0 or higher must be installed on all systems running DSR software.

Installing DSAuthentication Service

The DSAuthentication Service manages the level of access users have to system servers as well as the topology and connections for the system. For each attached computer, the DSAuthentication Service also stores pertinent system information in a database for easy retrieval by system administrators. This database is for information only and is not involved in the permissioning function of the DSAuthentication Service.

NOTE: The DSAuthentication Service MUST be installed on a PC running Windows 2000 Service Pack 1 or Windows NT 4.0 Service pack 4 or higher on an NTFS hard drive partition.

To install the DSAuthentication Service software

NOTE: You will need to reboot your system as part of the installation process and log-in as Administrator. This is necessary for Windows to properly register the new application.

If you are installing from the DSR software CD

1. Insert the DSR Software CD. An autorun file will bring up a menu of installation options.
2. When prompted to select a program to install, select Install DSAuthentication Server. The installation will begin.
3. Follow the on-screen instructions. Windows will determine if the Microsoft Windows Installer Service is available. If it is not, Windows will install it and reboot the system. Setup will automatically continue after the reboot.
4. The Installer will determine if the MDAC components need to be installed. If so, they will be loaded and the system will reboot. Setup will automatically continue after the reboot.
5. Finally, the installer will install the DSAuthentication Service and reboot.

If you are downloading the DSR software from Avocent

1. Using your DSR User Documentation and Software Download Instructions sheet, download the DSR software from the Avocent website.
2. Double-click on the executable downloaded from Avocent. The installation will begin.
3. Follow the on-screen instructions. Windows will determine if the Microsoft Windows Installer Service is available. If it is not, Windows will install it and reboot the system. Setup will automatically continue after the reboot.
4. The Installer will determine if the MDAC components need to be installed. If so, they will be loaded and the system will reboot. Setup will automatically continue after the reboot.
5. Finally, the installer will install the DSAuthentication Service and reboot.

Installing DSAdmin

DSAdmin is the administrative front end for the DSAuthentication Service. It controls user information and access levels. DSAdmin can be installed on the same machine as the DSAuthentication Service or a separate machine and connect to the DSAuthentication Server through the network. You will need to log-in as Administrator to proceed.

To install DSAdmin:

If you are installing from the DSR software CD

1. Insert the DSR Software CD. An autorun file will bring up a menu of installation options.
2. When prompted to select a program to install, select DSAdmin.
3. Follow the on-screen instructions.

If you are downloading the DSR software from Avocent

1. Using your DSR User Documentation and Software Download Instructions, download the DSR software from the Avocent website.
2. Double-click on the executable downloaded from Avocent. The installation will begin.
3. Follow the on-screen instructions.
4. During the installation, a window will appear. You will need to enter the name or IP address of the PC where the DSAuthentication Service is installed.

Installing DSView

The DSView software displays a listing of servers that an individual user can access. The DSAuthentication Service will check your NT Domain credentials and provide a list of servers available to you. There is a refresh option in the event that a new server is added, changed or deleted. Once you have selected a server from the list, the video of the selected system will be displayed in a Session window on the user monitor. DSView can be installed on any PC running a Win32 platform. You will need to log-in as Administrator to proceed.

To install DSView:

If you are installing from the DSR software CD

1. Insert the DSR Software CD. An auto-run file will bring up a menu of installation options.
2. You will be prompted to select a program to install. Select DSView.
3. Follow the on-screen instructions.

If you are downloading the DSR software from Avocent

1. Using your DSR User Documentation and Software Download Instructions sheet, download the DSR software from the Avocent website.
2. Double-click on the downloaded executable. The installation will begin.
3. Follow the on-screen instructions.
4. During the installation, the Select Authentication Server Name window will appear. You will need to browse for and select the name of the PC where the DSAuthentication Service is installed.

Adding a DSR to your System

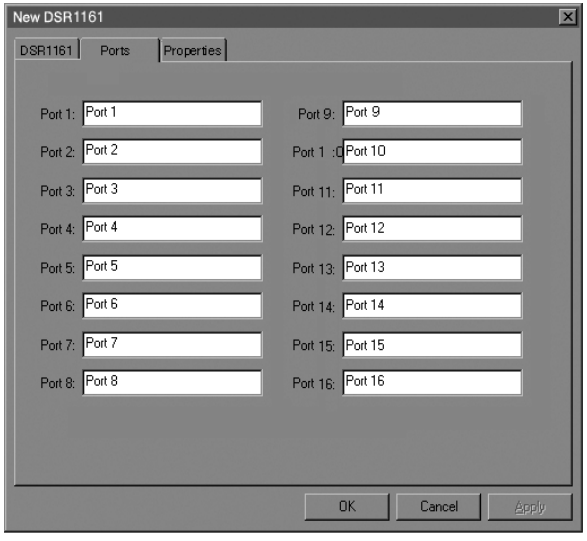
Once you have installed your hardware and software, you will need to configure the system for use.

To configure your system to add a DSR unit:

1. Launch the DSAdmin software.
2. Double-click on the icons labeled *Topology* and then *Your Network*. A listing of all DSR units accessible by the system will be displayed.

To add a new DSR unit to the system:

1. From the main DSAdmin menu, select File - New - DSR. The New DSR window will appear.
2. Under the DSR tab, enter the IP Address for the DSR unit that you are adding. This is the IP address that you assigned in the Terminal Applications menu. (See *Terminal Applications* in this chapter.) Under the Port tab, you can give your servers unique names.



3. Configure each individual port as shown later in this chapter.

Configuring Host PCs

A computer attached through a DSRIQ cable to a DSR unit is called a Host PC. If you are attaching a Host PC, you can give it a descriptive name in the port field. No further configuration is necessary.

Configuring DSAdmin

When DSAdmin is activated, the topology of all Host PCs that may be accessed system-wide is displayed in a tree structure. This tree structure can be displayed in two ways: a topology view showing servers and the DSR unit they're connected to and a server view that shows all available servers.

For the topology view, the first level of the tree is the network IP addresses of the DSR units in the system. To display this level, click on *Topology* and then *Your Network*. Each IP address listed may be expanded by double-clicking on it. This will display the sixteen ports for the DSR corresponding to that address. Each of these ports shares the DSR's IP address.

If a computer is attached to the port, the properties of the port will be the same as the properties of the computer.

IP Address options

You may right click on any IP address and bring up five options: Collapse, Expand, Properties, Delete and Permissions.

Collapse

Clicking on this option will hide the port information associated with the selected IP Address.

Expand

Click on this option to display the port information associated with the selected IP Address.

Properties

This option will allow you to enter distinguishing information such as a description or emergency contact information pertaining to the selected DSR unit.

Delete

This menu option will delete the selected DSR unit from DSAdmin.

Permissions

This option will allow you to configure access for a DSR unit. The DSR has three levels of access: Administrator, User and None. Administrator access allows you to perform administrator level commands for all channels on the designated DSR unit. User access allows you to view and operate a channel but you will not be able to alter administrator settings for that channel. When permissions on a channel are made, a check will be made to determine if that node has any levels below it. If there are, a prompt will appear asking if the changes should be applied to all levels below the node.

NOTE: By default, all users with access to the system will have administration and user access to every port.

Port options

You may right click on any port and bring up three options: Properties, Rename and Permissions.

Properties

This option will allow you to enter distinguishing information such as a description or emergency contact information pertaining to the selected port.

Rename

Use this option to change the name of the port.

Permissions

This option will allow you to configure an individual port for access. The DSR has three levels of access: Administrator, User and None. Persons with Administrator access may access administrator level commands for all channels in their permissions profile. Persons with User access may view and operate a channel but can not alter administrator settings for that channel.

When permissions on a node are made, a check will be made to determine if that node has any levels below it. If there are, a prompt will appear asking if the changes should be applied to all levels below the node.

NOTE: By default, all users with access to the system will have administration and user access to every port.

To change default user permissions:

1. Right click on the port or DSR unit you wish to change and select the Permissions option.
2. A user listing will appear. You will see a user listed as *Everyone* which is configured with the default permissions. Any user you do not set up with

individual permissions will use this default configuration.

3. Click on the user *Everyone*. The default setting shows both boxes at the bottom of the menu checked. Check or uncheck the *Administrator access* and *User access* boxes to control access for all users without a specifically assigned configuration. Remember, Administrator access will allow the user to change permissions in the DSAdmin software for any user listed.

Adding Users

If you wish to give individual users a different access level than the default, you will first need to add them to the User List.

To add users:

1. Right click on the port you wish to change and select Permissions. This will activate the Permissions window.
2. Click on *Add* button. A menu will appear listing all users on the Windows domain network. Double-click on the user whose permissions you want to change. This will move that user's name to the permissions list.
3. Click on the new user's name and check the access boxes appropriately.

To change specific user permissions:

1. Right click on the port or DSR unit you wish to change and select Permissions.
2. The Permissions window will appear listing all configured users. Change an individual user's access level by clicking on that user's name and selecting the access level you wish the user to have. If a user isn't listed, click the *Add* button. Refer to the previous section *Adding Users*.

NOTE: If you remove all permissions from a port or DSR unit, access to that port or unit will be lost.

CHAPTER 3

Basic Operations

Contents

Basic Operations/Terminology 21

Keyboard Macros 23

Using the Session Window 24

Chapter 3 – Basic Operations

Basic Operations/Terminology

Throughout this chapter and the rest of the manual, the following naming conventions will be used:

Host PC	A computer that is attached to the DSR and controlled through the DSView software
Node	A Host PC
Port	One of the sixteen PC/KVM Switch interfaces on the DSR
Remote PC	A computer running DSView
Session	The process of accessing and controlling a single Host PC connected to a DSR unit from a Remote PC. A Session is initiated from DSView running on a Remote PC. More than one session at a time may be launched and active using DSView.

Power up and LEDs

The DSR should be powered up before any attached servers. Indicator lights on the front of the unit will illuminate to indicate the status and activity of each port and a green LED labeled *Power* will show that the unit is receiving power.

There are two LEDs above each port number on the front of your unit: one green and one amber. The green LED will illuminate when the attached system is powered up. The amber LED will illuminate when that computer is being accessed by a DSView client or local port.

There are also LEDs on the DSR front panel to indicate the status of your LAN connection. If you are successfully linked to the network, the green LED labeled *Link* will be lit and an amber LED labeled *10/100* will indicate that you are communicating at the 100Mbps speed. This LED will blink if there is network activity on the associated DSR unit.

Finally, you will find a 9-pin serial connector on the back panel of the DSR. This is used to configure the DSR and will be discussed further in the *Terminal Operations* Chapter.

DSView

KVM switching with the DSR is accomplished through the DSView software. When the DSView application is opened, a list of available computers is displayed. This list may be displayed in two forms,

Topology View and Server View. Both viewing methods can be selected under the View command in DSView.

In Topology view, available computers are arranged in a tree structure. Available DSR units are listed vertically by IP address. Each unit can be expanded to display devices attached to them.

In Server View, available computers are listed by name only.

DSView Icons

The DSView designates the type of device attached to it by specific icons within the viewing panes. These icons are outlined in the table below.

Icon	Description
	DSR Unit (Topology View)
	A Server attached to a DSR (Topology View)
	A Server attached to a DSR (Server View)

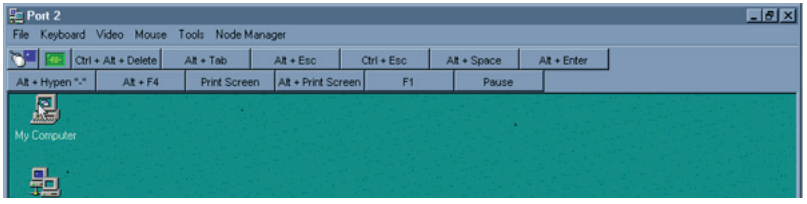
The OnBackup Status Bar Indicator

When DSView is communicating with its assigned primary DSAuthentication Server, the name of that server will appear in a status window. If DSView is unable to communicate with the Primary Server, it will attempt to communicate with the backup. If DSView is communicating with a backup server the sever's name will appear highlighted in yellow.

NOTE: When DSAdmin is communicating with the backup DSAuthentication Server it is working in a degraded mode. The backup DSAuthentication Server allows only View operations and does not allow any modifications to the tree, properties or permissions settings. When DSAdmin is using a backup server the Onbackup status window will turn yellow.

To access a computer attached to a DSR using DSView:

1. Launch the DSView software. This will activate the DSView Node Manager and provide you with a list of servers that you may access.
2. Double-click on the server that you would like to access. This will open a Session window to allow the user control of the Host PC.

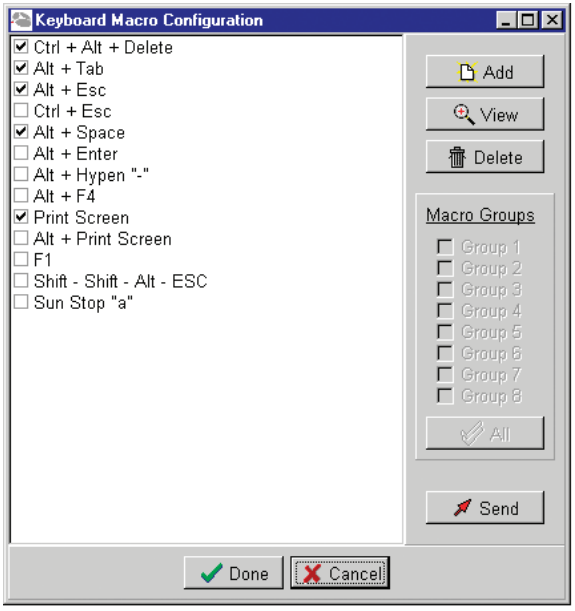


Keyboard Macros

Since the DSView software is running on a PC, certain commands must be sent to the controlled computer, or Host, via keyboard macros. For example, pressing *Control+Alt+Delete* on your keyboard would reset the PC running the DSView software rather than resetting the Host PC. To reset the host PC, a macro is needed. Your DSView comes with numerous sequences pre-configured for ease of operation.

Displaying/Editing Macro Selection Buttons

You can access a list of programmed keyboard macros by selecting Tools - Keyboard - Macros from your DSView Node Manager window.



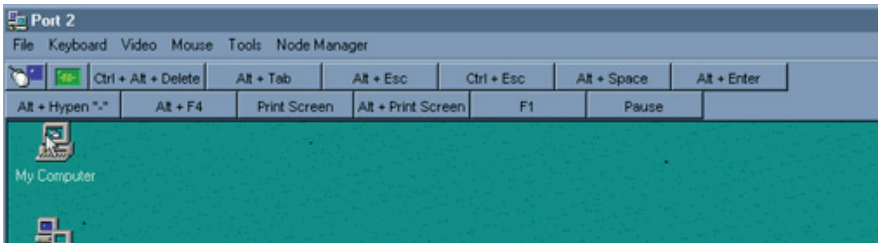
Each programmed macro will have a check box by it. Checked macros will appear at the top of DSView Session windows.

Sending Keyboard Macros

You can send a macro command by either clicking on the macro buttons in the Session window or selecting it from the macro list and clicking the *Send* button. For information, see *Chapter 4: Advanced Operations*.

Using the Session Window

Computers attached to the DSR are operated through a Session window.



When you are operating a Host system using the DSR, you will be provided with several optional commands. An explanation of each is provided below:

File

Capture to File: Allows you to take a screen *snapshot* of whatever is being displayed in the Session window and save it to a file on the Remote computer.

Capture to Clipboard: Allows you to capture any data selected on a Host PC to the clipboard on the Remote computer.

Keyboard

Macro: Brings up the Macro Command window. For more information, see *Keyboard Macros* in Chapter 3.

Display Toolbar: Allows the user to toggle the on-screen macro buttons on and off.

Toolbar Macro Set: Allows you to select alternate toolbar macro sets. For more information, see *About Macro Groups* in Chapter 4.

Video

Refresh Frame: Forces a complete screen redraw for the selected Session window. This is useful for clearing any video anomalies that occur as a result of opening windows or changing video settings.

Scaling: Changes the scale of a Session window to better accommodate multiple Session Windows open simultaneously at the Remote PC.

Full Scale: Returns the display to the default resolution or 1024x768, whichever is smaller.

Pane Scale: Sets the display to the size specified in Set Scaling below.

Default Display: Readjusts the display area to 1024x768 regardless of the input format.

Set Scaling: Allows the user to choose the display format. Set Scaling will force the image to be scaled every time the target is accessed.

Mouse

Align: Brings the mouse pointer in the Session window into alignment with the pointer on the Remote PC.

Scale: Allows the user to manually calibrate the cursor movements when adjustments are not possible on the Host.

Standard: Default setting.

Custom: Allows the user to adjust the sensitivity of the cursor movement on the Host computer.

Tools

Hot Plug

Re-Enable Mouse: Used to re-establish mouse control of an attached computer when it has stopped responding.

Re-Sync Mouse: Used to resynchronize mouse communication packets. Do not use this command unless instructed to do so by Avocent Technical Support.

Host Scan Set: Used to change the keyboard emulation mode for the Host Computer. It should not be changed from Scan Set 2 except in rare cases.

Video For more information, see *Adjusting Video Parameters* in Chapter 4.

Auto Adjust: Re-calibrates the video to the current Host image.

Manual Adjustments: Allows the user to make fine adjustments to the video parameters to improve video clarity and eliminate noise transmissions. For more information, see *Adjusting Video Parameters* in Chapter 4.

Refresh Rates: Allows the user to set Refresh and Frame rates to improve performance.

Communications:

Used to fine tune the DSR by allowing users to enter the speed of their network. The DSR uses this setting to compensate for slower networks. If you are unsure of your network speed, leave this set to the default of Fast Ethernet.

Node Manager

Brings the Node Manager to the front.

CHAPTER 4

Advanced Operations

Contents

Changing the System Settings 29

Altering Authentication Server Settings 29

Altering DSView Settings 31

Macro Groups 34

Changing Cursor Settings 35

Adjusting Video Parameters 35

Chapter 4 – Advanced Operations

Changing the System Settings

Depending on the level of security that you desire, certain settings may be made system-wide through the use of DSAdmin's System Settings window. These options can be accessed by selecting Options - System Settings.

Changing the DSView Session window timeout

DSView can be configured to automatically log a user out after a prespecified inactivity period. This can be used to heighten security and keep a user from blocking access to a channel by forgetting to log out. To change the timeout enter the desired inactivity period within the provided window. You can also disable this feature by unselecting the Enable box.

Limiting Port User Information

When a user attempts to select a channel that is in use by another user, DSAdmin will report who is currently using that channel and offer users with Administrative rights to force a logout. If the Administrators only box is selected users without Administrator access will only receive a message that the port is in use.

Automatic Deletion of Audit Logs

Here administrators can determine how long logfiles are kept before they are deleted. If you do not wish to have logfiles automatically deleted enter a 0 in the provided field.

NOTE: Allowing logfiles to build for an extended period can consume a great deal of disk space. Routine deletion is recommended.

Altering Authentication Server Settings

Once your DS system is fully configured, you may have a need to change the settings at a later date.

Adding a new Authentication Server

Multiple DSAuthentication Servers can be added to increase system flexibility. To add a new Authentication server:

To add a new Authentication Server

1. Load the DSAdmin software and select File - Configure Authentication Servers List to activate the Configure Authentication Servers List window.
2. Click the Add button on the right side of the window.
3. You will be prompted for name of the new server. You can enter it in the provided window or browse for it by clicking the Browse button.
4. You may also enter a Backup Authentication Server for the new server

using the same method in the provided field. If you do not wish to associate a Backup just leave the field blank.
5. Click the ok button to exit and save changes.

To delete an Authentication Server

1. Load the DSAdmin software and select File - Configure Authentication Servers List to activate the Configure Authentication Servers List window.
2. Click on the server name that you wish to delete and then click Delete. This will remove the Primary/Secondary pair.

To select an alternate Authentication Server

1. Load the DSAdmin software and select File - Select Authentication Server to activate the Select Authentication Server window.
2. Click on the Primary/Backup server pair that you wish to use and click ok.

If you mark the Show on Startup box you will be prompted to select a server pair every time that you start the machine.

To add or change the backup Authentication Server for an existing Primary Server

1. Load the DSAdmin software and select File - Configure Authentication Servers List to activate the Configure Authentication Servers List window.
2. Click the name of the Primary Server that you wish to change and select the Modify button on the right side of the window.
3. You will be prompted for names of the Primary and Backup servers. You can change either in the provided window or browse by clicking the Browse button.
4. Click the ok button to exit and save changes.

To add a new Backup Authentication Server

1. Install the DSAuthentication software on the PC that is going to be the new server.
2. Run the “DSAuth Configuration” Control Panel. The DSAuthentication Configuration applet will appear.
3. Within the applet, change the mode of operation to “Backup” and enter the name of the Primary DSAuthentication PC. When prompted, restart the service.
4. Next, run the “DSAuth Configuration” Control Panel on the primary DSAuthentication PC. The DSAuthentication Configuration applet will appear.
5. Within the applet, change the name of the Backup Authentication server to the new name. When prompted, restart the service to complete the change.
6. Next, click the ‘Install Authentication Tokens’ button in the DSAuth Configuration Control Panel Applet. This will issue new authorization tokens to all attached DSView systems.

7. To complete the change, update the name of the Backup DSAuthentication PC in all DSView installations.

To promote the Backup Authentication Server to Primary

1. Run the "DSAuth Configuration" Control Panel on the primary DSAuthentication PC. The DSAuthentication Configuration applet will appear.
2. Within the applet, change the mode of operation to "Backup" and enter the name of the Primary DSAuthentication PC. When prompted, restart the service.
3. Next, run the "DSAuth Configuration" Control Panel on the backup DSAuthentication PC. The DSAuthentication Configuration applet will appear.
4. Within the applet, change the mode of operation to "Primary" and enter the name of the Backup DSAuthentication PC. When prompted, restart the service.

Forcing a Full Resynchronization

If the integrity of the topology of the backup server should come into question or if a PC is moved to controlling a different topology, a Full Resynchronization should be performed. This will force a check of all elements and should only be performed when necessary as it consumes a great deal of time and network bandwidth.

To force a Full Resynchronization:

1. Run the "DSAuth Configuration" Control Panel. The DSAuthentication Configuration applet will appear.
2. Select your backup server and click the Force Full Resynchronization button.
3. Click OK to begin the resynchronization.

Altering DSView Settings

Under most circumstances, the DSView software will function smoothly with the default settings. However, depending on your system, you may wish to fine-tune some aspects of its performance.

To change your default desktop size

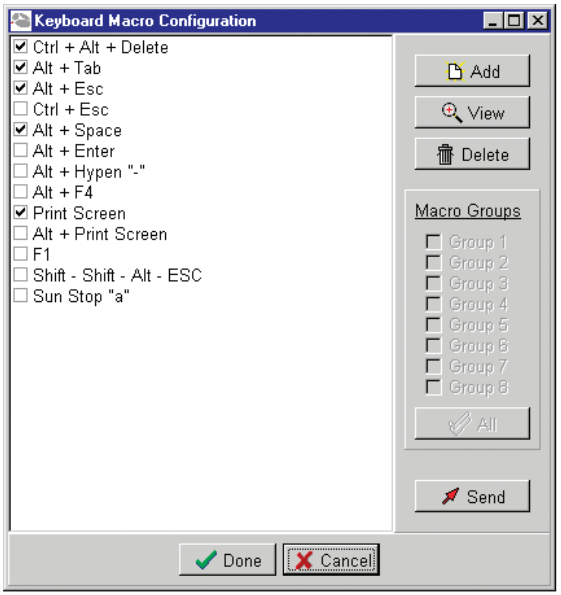
There are occasions when you may wish to change the resolution on your desktop to one resembling the Host system. To do this from within the DSView software:

1. Select Tools-Desktop from the command bar at the top of the Session window.
2. Choose a resolution. Your desktop will be resized to the resolution specified. Repeat this command to return to your original resolution.

To program a keyboard macro

If you require a key sequence that is not pre-programmed into the DSR, you can add a macro by performing the following steps:

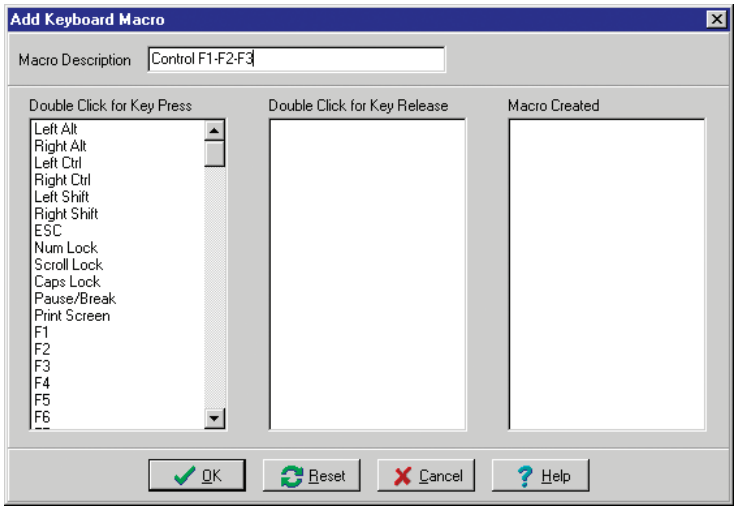
1. From the Node Manager, select Tools - Keyboard - Macros.
2. The Keyboard Macro Configuration window will appear listing the currently available macros. Click on the *Add* button in the upper right hand corner.



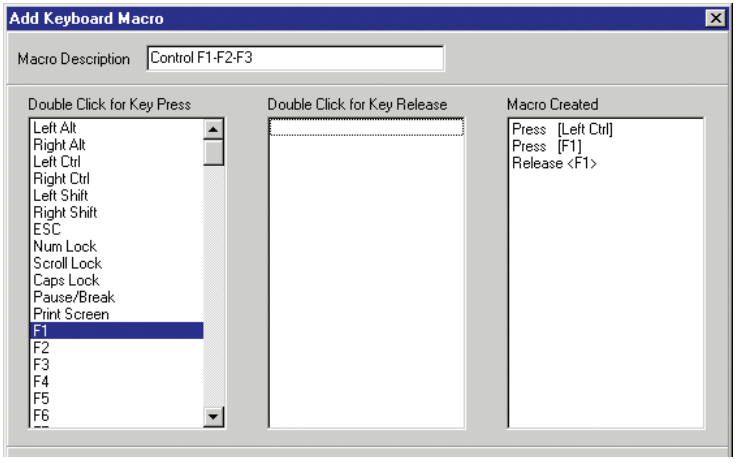
3. The Add Keyboard Macro dialog box will appear. Enter a unique description for the macro in the space labeled Macro Description.
4. In the window titled Double-click for Key Press, double-click the first keystroke of your macro. This will move the keystroke to the window labeled Double-click for Key Release.
5. If this key needs to be released before the next keystroke is entered, double-click the keystroke in the Double-Click for Key Release window to move it to the Macro Created window. If not, leave this key in the Double-Click for Key Release column at this time. Repeat step 4 with your next keystroke. When you have no further keystrokes, proceed to step 6.
6. Now, double-click on the remaining commands, if any, under the Double-click for Key Release window in the order in which you would like them released to move them to the window labeled Macro Created. The Macro Created window will now list the key sequence in the exact order that it will be performed by the system. There should be no keys remaining in the center column under Double-click for Key Release.
7. Click on the *OK* button at the bottom of the window to save the macro. It will now appear in the Macro list and also in the macro commands on every host window.

For example: To create a macro where the Control key is held while F1-F2-F3 are typed:

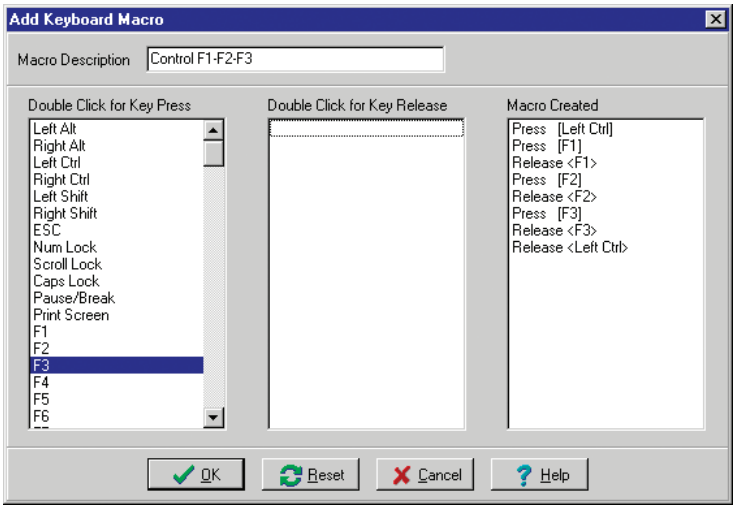
1. Enter a name for the macro. We have named this one Control F1-F2-F3.



2. The Control key is pressed first and held, so double-click on the Left or Right Ctrl keystroke under Double-click for Key Press. It will move to the second window and the command Press [Left Ctrl] will appear in the third window.
3. F1, F2 and F3 are pressed and released in order. Locate F1 in the Double-click for Key Press window and double-click it. It will move to the second window and the command Press [F1] will appear in the third window.
4. F1 will be released before F2 is pressed, so you will need to double-click on F1 under the Double-click for Key release window before proceeding. This will create a command in the Macro Created window that displays Release F1 and then F1 will disappear from the second window.
5. Repeat Step 3 and 4 with F2 and F3.



6. The last step is to release the Control key. Double-click on Left Ctrl in the middle window. The command Release [Left Ctrl] will appear in the 3rd window.



7. The keystrokes will be listed in correct order in window three. Click *OK* to accept the macro.

Macro Groups

Since the DSR can be used to access different computer platforms, users may find it helpful to assign distinct macro groups to individual systems.

To create a Macro Group:

1. From a DSView Session window, select Keyboard - Macro to activate the Keyboard Macro Configuration window.
2. The subwindow titled Macro Groups contains eight macro groups available for configuration. To assign a macro to a group, click on the macro name and, in the box labeled Macro Groups, select which groups you'd like to have it assigned to.

Using Macro Groups

To activate a macro group, select Keyboard - Toolbar - Macro Set and the Macro Group you wish to use. The macros belonging to the group you selected will appear along the top of the session window.

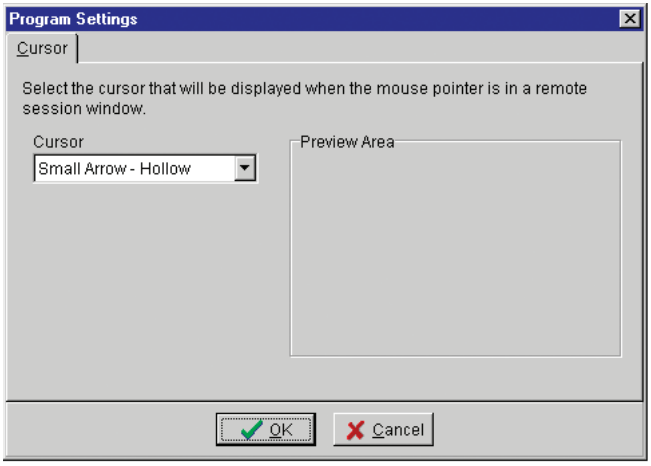
NOTE: These macros will override your default selections.

Changing Cursor Settings

When using the DSR, your mouse pointer will change shape when over a Host server window. You can change the appearance of this second pointer from within the DSView software.

To change the mouse pointer appearance:

1. From the Node Manager, select Tools - Settings - Cursor.
2. The Program Settings window will appear.



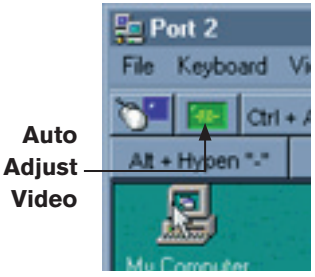
3. You may select an alternate cursor from the pull-down menu under the Cursor heading.
4. To see what the alternate cursor will look like, move your mouse pointer over the area labeled Preview Area.
5. When you have selected a new cursor, click on the *OK* box at the bottom of the window.

Adjusting Video Parameters

In most cases, you will not need to alter the DSR Video Settings from the default. The system will automatically adjust and use the optimal video parameters. The DSR performs best when the video parameters are set such that no (zero) video packets are transmitted for a static screen.

The easiest way to adjust your video parameters is to click on the *Auto Adjust Video* button.

Clicking this button will instruct the DSR to optimize the video to ideal settings.



Users who wish to fine tune their video performance can do so with the commands below. All are accessed from the Tools - Video - Manual Adjustments command set located in the Session window. Users may verify the level of packets per second required to support a static screen by selecting Tools-Video-Manual Adjustments and observing the packet rate which is located in the lower right hand corner of the dialog box. The following describes the effects of the video adjustments.

Image Position

If Host and Remote mouse cursors do not align exactly when the Mouse-Align function is selected, video centering may be required.

To move the screen to the right, click the up arrow on the Left/Right setting. The down arrow moves the image to the left. Similarly the image can be moved up and down. Generally, only a few increments are required. Moving the mouse into the active Host window area will show if the correction is complete. The point (hot spot) of the Host and Remote cursors should be superimposed. Click on the *OK* button to save settings.

Image Clarity

If the image in the Session window is not clear, select Tools - Video - Auto Adjust first. (This command is also available in the Video Adjustments window.) In most cases, this will correct video problems. In those cases where clicking on Auto Adjust several times does not clear up a mottled screen, adjusting the Contrast and Brightness may help.

First increase the Brightness. Do not move more that 10 increments before adjusting the Contrast. Generally, the contrast should be moved very little.

When the packet count is close to zero, refresh the screen. If the packet count stays at zero the video adjustment is completed.

Detection Thresholds

In some cases, noise in the video transmission keeps the packets/sec count up. This can be seen when little dots change in the area of the cursor when it is moved. Varying the Noise and Priority thresholds can result in quieter screens and improved cursor tracking. The default settings are Noise setting 6 and Priority setting 18. These numbers set the minimum levels in terms of changed pixels per thousand that are allowed without updating the video block. Raising the Noise Threshold will usually make the packets/sec count decrease. The result will be larger cursor image artifacts remaining on the screen. Decreasing it will make the size of these artifacts smaller.

The Priority Threshold sets the level where a significant change is noted, such as a new cursor position. Increasing the level will make the mouse movements more sluggish. The Priority should always be greater than the noise, and usually 2 to 3 times its value. Setting these thresholds to zero will cause a constant refresh of the screen. This will make cursor tracking very difficult and can make it difficult for other network users. The goal is to reduce the packet rate to zero.

Image Capture

The image width and fine-tuning adjustments pertain to how the target video is captured and digitized and are seldom changed. The Width parameter is automatically changed by the Automatic Adjustment function. A special image is required on the target in order to make accurate adjustments independently. The Fine setting may be adjusted up or down in eight unit increments.

To save the Video Adjustment settings once you've finished, click on the *OK* button at the bottom of the Video Adjustments window.

Video Scaling

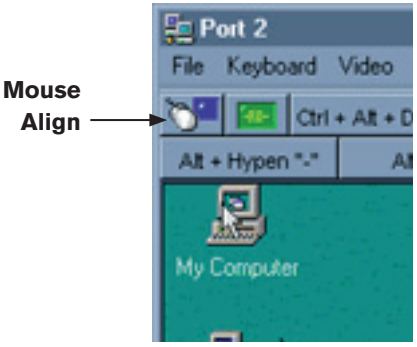
At times, a user may connect to a computer running at a higher resolution than that of their remote system. When this occurs, the host system will be displayed in a DSView window with scroll bars. The host resolution will remain the same and users can scroll to the areas that fall outside of the frame.

If a user wishes to display the host system's entire screen it may be scaled to fit within the current resolution with the Scaling Tools.

Mouse Alignment

Because the DSR cannot receive constant feedback from the mouse, there are times when the mouse on the DSR system may become out of sync with the mouse on the host system. When this occurs, users may resync the mouse by clicking on the *Mouse Align* button shown.

In most cases, this will correct the problem.



CHAPTER 5

Local Port Operation

Contents

Controlling your System at the Local Port . . 41

Viewing and Selecting Ports and Servers 41

Configuring OSCAR 44

Resetting your Keyboard and Mouse 50

Displaying Version Information 51

Chapter 5 – Local Port Operation

Controlling your System at the Local Port

The DSR1161 and DSR2161 models include a local port on the back of the unit. This port allows you to connect a keyboard, monitor and mouse to the unit for direct access. The DSR uses OSCAR, Avocent's patented on-screen configuration and activity reporting interface, which has intuitive menus to configure your system and select computers. Computers can be identified by name or number, allowing you to customize server names.

Viewing and Selecting Ports and Servers

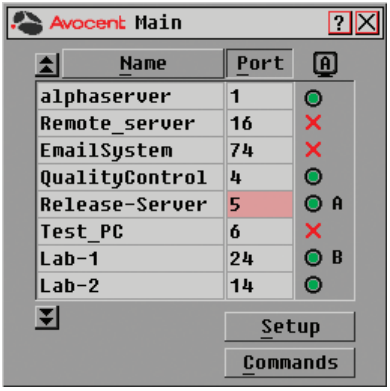
Use the Main dialog box to view, configure and control the servers in the DSR system.

To access the Main dialog box

Press **Print Screen** to start OSCAR and gain access to the Main dialog box. The Main dialog box will appear.

Viewing the Status of Your DSR System

The status of servers in your system is indicated in the far right column of the Main dialog box. The following table describes the status symbols.



OSCAR Status Symbols

Symbol	Description
	Server connected and powered up.
	Connected server is powered down or is not operating properly.
	Local user identifier. In DSR1161/DSR2161 configurations, the local user will always be A.
	Indicates that a DSRIQ cable is being upgraded.

Selecting Servers

Use the Main dialog box to select servers. When you select a server, the DSR reconfigures the keyboard and mouse to the settings for the selected server.

To select servers

1. Double-click the server name or port number.
   –or–
   If the display order of your server list is by port (*Port* button is depressed), type the port number and press **Enter**.
   –or–
   If the display order of your server list is by name (*Name* button is depressed), type the first few letters of the name of the server to establish it as unique, and press **Enter**.

To select the previous server

Press **Print Screen** and then **Backspace**. This key combination toggles you between the previous and current connection.

To disengage the user from a server

Press **Print Screen** and then **Alt**+**Ø**. This leaves the user in a free state, with no server selected. The status flag on your desktop displays *Free*.

Soft Switching

After you press **Print Screen** to initially open the OSCAR GUI, you can select servers without displaying OSCAR. This is called a soft switch.

To configure servers for selecting without displaying OSCAR

1. Click *Setup-Menu*.
2. For Delay Time, type the number of seconds of delay desired before the Main dialog box is displayed after **Print Screen** is pressed.
3. Click *OK*.

To select servers without displaying OSCAR

1. To select to another server, press **Print Screen**. If the display order of your server list is by port (*Port* button is depressed), type the port number and press **Enter**.
   –or–
   If the display order of your server list is by name (*Name* button is depressed), type the first few letters of the name of the server to establish it as unique, and press **Enter**. If the selection is performed before the delay time has expired, OSCAR GUI does not display.
2. To switch back to the previous server, press **Print Screen** then **Backspace**.

OSCAR navigation basics

The following table describes how to use the keyboard and mouse to navigate OSCAR GUI.

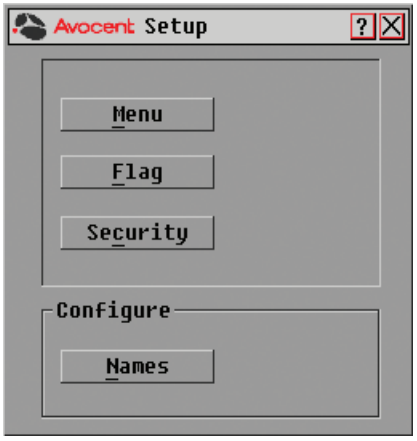
This Keystroke	Does This
Print Screen	Opens OSCAR GUI.
F1	Opens the Help screen for the current dialog box.
Escape	Closes the current dialog box without saving changes and returns to the previous one. In Main dialog box, it closes OSCAR and returns to the selected server. In a message box, it closes the pop-up box and returns to the current dialog box.
Alt	Use in combination with the underlined letters to open dialog boxes, select or check options, and execute actions.
Alt+X	Closes current dialog box and returns to previous one.
Alt+O	Selects the *OK* button, then returns to the previous dialog box.
Enter	Completes the switch operation in Main dialog box and exits OSCAR GUI.
Single-Click, Enter	In a text box, it selects the text for editing and enables the left and right arrow keys to move the cursor. Press **Enter** again to quit the edit mode.
Print Screen, Backspace	Toggles back to previous selection if no other keystrokes have been typed.
Print Screen, Alt+Ø	Immediately disengages user from a server –no server is selected. Status Flag displays *Free*.
Print Screen, Pause	Immediately turns on screen saver mode and prevents access to that particular console, if it is password protected.
Up/Down Arrows	Moves the cursor from line to line in lists.
Right/Left Arrows	Moves the cursor between columns. When editing a text box, these keys move the cursor within the column.
Page Up/Page Down	Pages up and down through Name and Port lists.
Home/End	Moves the cursor to the top or bottom of a list.
Backspace	Erases characters in a text box.
Delete	Deletes current selection.
Shift-Del	Deletes from current selection to all lines below it when editing a scan list.
Numbers	Type from the keyboard or keypad.
Caps Lock	Disabled. (Use the **Shift** key to change case.)

Configuring OSCAR

You can configure your DSR system from the Setup menu. Below Configure, select the *Names* button when initially setting up your DSR system to identify servers by unique names. Select the other setup features to manage routine tasks for your servers from the OSCAR menu.

To access the Setup menu

1. Press **Print Screen**. The Main dialog box will appear.
2. Click *Setup* in the Main dialog box. The Setup menu appears.



Setup Features to Manage Routine Tasks for your Servers

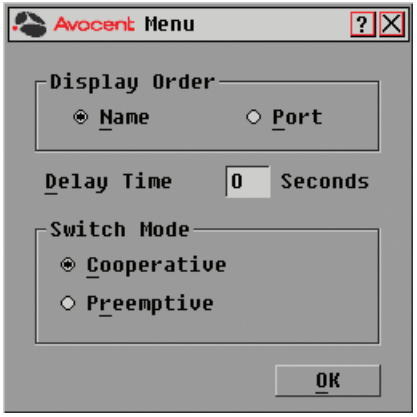
Menu	Change the server listing between numerical by port and alphabetical by name.
	Change the delay time before the Main dialog box displays after pressing **Print Screen.**
Flag	Change display, timing, color, or location of the status flag.
Security	Set passwords to protect or restrict server access.
	Enable the screen saver.
Names	Identify servers by unique names.

Changing the Display Behavior

Use the Menu dialog box to change the display order of servers, set a time to delay display of the OSCAR GUI after pressing **Print Screen** and change the switch connection mode.

To access the Menu dialog box

1. Press **Print Screen**. The Main dialog box will appear.
2. Click *Setup-Menu* in the Main dialog box. The Setup menu appears.



To choose the display order of servers in the Main dialog box

1. Select Name to display servers alphabetically by name.
   –or–
   Select Port to display servers numerically by port number.
2. Click *OK*.

If the servers are displayed by name, the *Name* button is depressed in the Main dialog box and the indicator defaults in the Name column in the OSCAR GUI. If the servers are displayed by port number, the *Port* button is depressed in the Main dialog box, and the indicator defaults in the Port column in the OSCAR GUI.

To set a delay time for OSCAR GUI

1. Type in the number of seconds you want to delay display of the OSCAR GUI after you press **Print Screen**.
2. Click *OK*.

Setting a time to delay display of the OSCAR GUI allows you to complete a soft switch without OSCAR GUI displaying. To perform a soft switch, see *Soft Switching* in this chapter.

To set the Switch Mode

1. Select the type of switching mode you desire:
   Cooperative (default setting) To have the DSR maintain the current user connection; the current user won't be disconnected if another user requests connection.
   –or–
   Preemptive To have the DSR allow any user to select any server at any time; a request from another user disconnects the current user.
2. Click *OK*.

Controlling the Status Flag

The status flag displays on your desktop and shows the name or port number of the selected server or the status of a particular port. Use the Flag dialog box to display the flag by port number or by server name, limit the time the flag displays, change the flag color, make the flag transparent or opaque and change the location of the flag on the desktop.

email_server	Flag type by name.
2	Flag type by port number.
Free	Flag indicating that the user has been disconnected from any/all systems.

To access the Flag dialog box

1. Press **Print Screen**. The Main dialog box will appear.
2. Click *Setup-Flag* to gain access to the Flag dialog box.
3. The Flag dialog box appears.

To determine how the status flag is displayed

1. Select Name to display the server by name or select Port to display by port number.
2. Select Displayed to show the flag all the time or select Timed to display the flag for only 5 seconds after switching.
3. Select a flag color in Display Color.
4. In Display Mode, select Opaque for a solid color flag or select Transparent to see the desktop through the flag.
5. To position the status flag on the desktop:
   a. Click *Set Position* to gain access to the Position Flag screen.

   b. Left click on the title bar and drag to the desired location.
   c. Right click to return to the Flag dialog box.

NOTE: Changes made to the flag position are not saved until you click *OK* in the Flag dialog box.

6. Click *OK* to save settings or click **X** to exit without saving changes.

Setting Console Security

Use the Security dialog box to set security on your local port console. You can establish a screen saver mode that engages after your console remains unused for a user-definable time delay. Once engaged, your console will remain locked until you press any key or move the mouse. You will then need to type in your password to log in.

Use the Security dialog box to lock your console (monitor, keyboard, and mouse) with password protection, set or change your password and enable the screen saver.

To access the Security dialog box

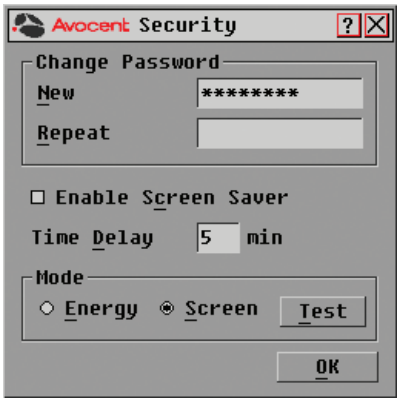
1. Press **Print Screen**. The Main dialog box will appear.
2. Click *Setup-Security* to gain access to the Security dialog box.
4. The Security dialog box appears.

To set or change the password

1. Single-click and press **Enter** or double-click in the New text box.
2. Type the new password in the New text box and press **Enter**. Passwords can be up to 12 characters long and are case sensitive. Legal characters are: A-Z a-z 0-9 (space) -.
3. In the Repeat box, type the password again and press **Enter**.
4. Click *OK* (if you only want to change your password) and then close the dialog box).

To password protect your console

1. Set your password as described in the previous procedure.
2. Select Enable Screen Saver.
3. Type the number of minutes for Time Delay (from 1 to 99) to delay activation of password protection and the screen saver feature.



4. For Mode, select Energy if your monitor is EnergyStar™ compliant; otherwise select Screen.

CAUTION: Monitor damage can result from the use of Energy Mode with monitors not compliant with EnergyStar.

5. Click *Test* to activate the screen saver test which lasts 10 seconds then returns you to the Security dialog box (optional).
6. Click *OK*.

To log in to your console

1. Press any key on the keyboard or move your mouse. The Password dialog box appears. Type your password, and then click *OK*.
2. Press **Print Screen** to start the OSCAR GUI.

To remove password protection from your console

1. From the Main dialog box, click *Setup-Security*; the Password dialog box appears. Type your password, and then click *OK*.
2. In the Security dialog box, single-click and press **Enter** or double-click in the New box. Leave the box blank. Press **Enter**.
3. Single-click and press **Enter** or double-click in the Repeat box. Leave the box blank. Press **Enter**.
4. Click *OK* (if you only want to eliminate your password).

To enable the screen saver mode with no password protection

1. If your console does not require a password to gain access to the Security box, go to step 2.
   –or–

If your console is password protected, see previous procedure then go to step 2 below.

2. Select Enable Screen Saver.
3. Type the number of minutes for Time Delay (from 1–99) that you want to delay activation of the screen saver.
4. Choose Energy if your monitor is EnergyStar compliant; otherwise select Screen.

CAUTION: Monitor damage can result from the use of Energy Mode with monitors not compliant with EnergyStar.

5. (Optional) Click Test to activate the screen saver test, which lasts 10 seconds, then returns you to the Security dialog box.
6. Click *OK*.

NOTE: Activation of the screen saver mode disconnects the user from a server—no server is selected. The status flag displays *Free*.

To exit the screen saver mode

Press any key or move your mouse. The Main dialog box appears.

To turn off the screen saver

1. In the Security dialog box, clear Enable Screen Saver.
2. Click *OK*.

To immediately turn on the screen saver

1. Press **Print Screen**, then press **Pause**.
2. This command only works when the user is connected to a server.

Assigning Server Names

Use the Names dialog box to identify servers by name rather than by port number.

To access the Names dialog box

1. Press **Print Screen**. The Main dialog box will appear.
2. Click *Setup-Names* to gain access to the Names dialog box.
3. The Names dialog box appears.

To assign names to servers

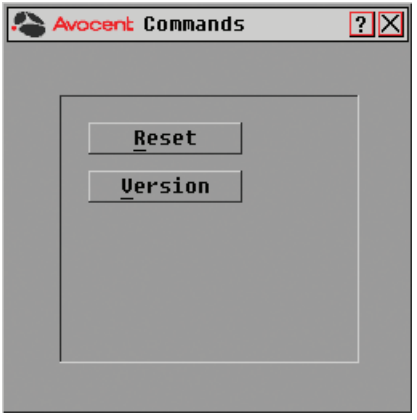
1. Double-click or press **Enter** to select the text in the Name box. Type a name. Names of servers may be up to 15 characters long. Legal characters include: A-Z a-z 0-9 (space) -.
   Press **Backspace** or **Delete** to delete an incorrect entry. Press the **Arrow** keys to move the cursor in the Name box. Press **Insert** or the **Space Bar** to insert a character space.
2. Repeat step 1 for each server in the system.
3. Click *OK* to save the names.
   –or–
   Click Defaults then click *OK* to restore default settings.
   –or–
   Click **X** or press **Escape** to exit the dialog box without saving changes.

To list servers alphabetically by name

Press **Alt+N** or click *Name* in the Main dialog box.

Resetting your Keyboard and Mouse

If a keyboard or mouse locks up, you may be able to reestablish operation of these peripherals by issuing a reset command. The reset command sends a hot-plug sequence to the server. The hot-plug sequence to a plug-and-play server causes the mouse and keyboard settings to be sent to the DSR. With communication reestablished between the server and the DSR, functionality is restored to the user.



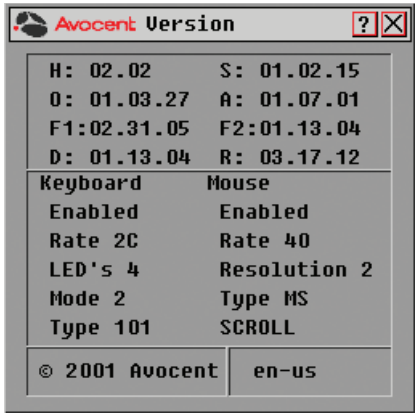
To reset the mouse and keyboard values

1. From the Commands menu, click *Reset*.
2. A message box displays indicating that the mouse and keyboard have been reset. Click **X** to close the message box.

Displaying Version Information

Use the Version dialog box to display the version number of the DSR firmware and any auxiliary devices connected to the DSR as well as display keyboard and mouse information for the currently selected server.

This information facilitates system troubleshooting and support. For optimum performance, keep your firmware current.



To display version information

1. Click *Version* in the Commands dialog box. The Version dialog box is displayed.
2. Click **X** to close the Version dialog box.

CHAPTER 6

Terminal Operations

Contents

Accessing the Terminal Menu 55

Chapter 6 – Terminal Operations

Accessing the Terminal Menu

Each individual DSR may be configured at the unit level through the Configuration port on the back of the unit. All Terminal Commands are accessed through a terminal or PC running terminal emulation software.

To access the Terminal menu

1. Connect a terminal or PC running terminal emulation software (such as Hyperterminal) to the configuration port on the back panel of the DSR using the supplied null-modem cable. The terminal should be set to 9600 baud, 8 bits, 1 stop bit, no parity and no flow control. The terminal may be connected at any time, even when the unit is powered.
2. Press any key to access the Main menu.

Terminal applications menu commands

The Terminal Applications menu of the DSR features seven selections: Network Configuration, Security Configuration, Firmware Management, Enable Debug Messages, Set/Change Password, Configure Sun keyboard layout code and Exit. Each are discussed below.

Network configuration

The DSR is configured for Network Access through this option. When it is selected, you will have access to the addressing that allows the DSR to be positioned in your network.

Security configuration

This menu option allows you to configure DSR authentication security. When it is selected, you will be given two menu options: Reset security keys (Authentication Server certificates) and Authentication Server connection status.

The DSR operates in one of two modes: All or Secure. This setting is controlled from the Security menu on the DSR console port. In the default All mode, the DSR allows any Authentication Server to initiate a session between the DSR and DSView. In Secure mode, only one specific Authentication Server is allowed to initiate this session; other Authentication Servers are locked out.

NOTE: In secure mode the ability to select a backup authentication server through DSView is eliminated.

When a DSR is added to the database with DSAdmin, the appropriate Authentication Server certificate is added to the DSR automatically. If DSAuthentication cannot contact the DSR to add the certificate, an error message is displayed and the DSR is not added to the database.

When the last reference to a DSR is removed from the database, the Authentication Server certificate is removed from the DSR, which allows the DSR to be moved from one Authentication Server to another. The Authentication Server certificate can also be removed from the Security menu on the DSR console port via the Reset Security Keys option.

When the DSR is in All mode, DSAdmin displays a warning message when the DSR is added to the database, stating that the certificate could not be installed. If you intend to operate in All mode you may safely ignore this warning. Otherwise, you may wish to change the Security settings on the console port of the DSR.

Firmware management menu

This menu option allows you to access two commands: Flash Download and Toggle Boot Firmware. The Flash Download selection allows you to upgrade your DSR firmware with upgrades available from Avocent. You may use the Toggle Boot Firmware command to switch from your current firmware back to the original factory firmware installed on your DSR unit. For more information see *Appendix A: FLASH Upgrades*.

Enable debug messages menu

This menu option allows you to configure the DSR to display messages regarding the status of the DSR unit. Once you select the level of detail you wish to receive, the DSR will begin to display information on your Terminal screen. When you are finished viewing, press any key to exit this mode.

Set/change password

The DSR can be set to a secure mode where the Terminal menu cannot be accessed without first entering a password.

To activate security:

1. Select the Set/Change Password menu option. You will be prompted to decide if you wish to continue. Enter a **Y**.
2. Type a password for this DSR unit and press **Enter** . This password may be up to 14 characters long.
3. You will be prompted to re-type the password. Once you complete this step, security will be active and you will not be able to access DSR Terminal Operations without the password.

To change the password:

1. Select the Set/Change Password menu option.
2. You will be prompted to type the old password and a new one.
3. Re-enter the new password to verify.

CAUTION: This password places your DSR Terminal in a secure mode. This password should be guarded like any network password and care should be taken to avoid forgetting or misplacing it. There are no means for recovering a lost password.

Exit

This menu selection will return you to the ready prompt.

Appendices

Contents

Appendix A: FLASH Upgrades 61

Appendix B: Technical Specifications 62

Appendix C: Technical Support 63

Appendix D: TCP Ports 64

Appendix A: FLASH Upgrades

The DSR FLASH upgrade feature allows you to update your unit with the latest firmware available. To perform this update, you will first need a Trivial FTP (TFTP) server. If you do not have a TFTP server, there are several shareware programs that you can download.

You can find a freeware TFTP server at http://klever.net/kin/canned/PumpKIN.exe

Next you will need to download the latest FLASH firmware from Avocent at http://register.avocent.com/. Save the FLASH upgrade file to the appropriate directory on the TFTP server.

Once this is complete, the following step will upload the new FLASH file.

To upload a new FLASH file

1. Connect a terminal or PC running terminal emulation software (such as HyperTerminal) to the configuration port on the back panel of the DSR using the supplied null-modem cable. The terminal should be set to 9600 baud, 8 bits, 1 stop bit, no parity, no flow control.
2. If the DSR is not on, turn it on now. After approximately 10 seconds, press any key to access the main menu.
3. You will see the Terminal Applications menu with six options. Select Option 3, Firmware management. (Please note: the current version of your firmware will be displayed on the Firmware Management screen.)
4. Select Option 1, FLASH Download.
5. Type the IP Address of your TFTP server and press **Enter** .
6. Type the name of the file that you downloaded from the Avocent site.
7. Confirm the TFTP download by typing a *y* or *yes* and pressing **Enter** .
8. The DSR will verify that the file you downloaded is valid. Next, you will be prompted to confirm the upgrade. Type a *y* or *yes* and press **Enter** to confirm.
9. The DSR will begin the FLASH upgrade process. On-screen indicators will display the upgrade progress. When the upload is complete, the DSR will reset and upgrade the internal subsystems.

WARNING: Do not cycle power to the DSR during this process. A loss of power will render the DSR inoperable and require the unit be returned to the factory for repair.

10. Once the upgrade is complete, a verification message will appear on screen.

Appendix B: Technical Specifications

Server Ports	
Number	16
Types	PS/2 Keyboard, PS/2 Mouse
Connectors	RJ45
Sync Types	Separate horizontal and vertical
Plug and Play	DDC2B
Video Resolution	Local Port Maximum 1600 x 1280 @ 75Hz Digital Port Maximum 1280 x 1024 @ 75Hz
Dimensions	
Dimensions (HxWxD)	1.75 x 17.00 x 11.00 in. 1U form factor (4.45 x 43.18 x 27.94cm)
Weight	8lbs (3.6kg) without cables
Heat Dissipation	92 Btu/hr
Airflow	8 cfm
Power Consumption	25 watts
AC-input power	40W maximum
AC-input Range	100 to 240 VAC
AC-input current rating	1A
AC-input cable	18 AWG three-wire cable, with a three lead IEC-320 receptacle on the power supply end and a country dependant plug on the power resource end.
AC Frequency	50 - 60 Hz Auto Sensing
Temperature	32 to 104 degrees Fahrenheit (0 to 40 degrees Celsius) operating; -4 to 158 degrees Fahrenheit (-20 to 70 degrees Celsius) nonoperating
Humidity	10 to 95% noncondensing
Agency Approvals	EN55022 Class A, EN55024, EN6200-3-2, EN6100-3-3, FCC15 Class A, VCCI Class A, IEC950, EN60950, UL 1950 third edition, CSA C22.2 No. 950
Configuration Port	
Number	1
Type	Serial RS232
Connectors	DB9 Male
Network Connection	
Number	1
Type	Ethernet: IEEE 8023, 10 Base-T, Fast Ethernet: IEEE 802.3U, 100BaseT
Connector	RJ45
User Consoles	
Type	PC running Windows NT or 2000 OS and DSR console application Minimum Configuration-300MHz Pentium III, 64Mb RAM, 100BaseT NIC, XGA Video Recommended Configuration-450MHz Pentium III , 128Mb Ram, 100BaseT NIC, SXGA Video
Local Port	
Number	1
Type	PS/2 and VGA

Appendix C: Technical Support

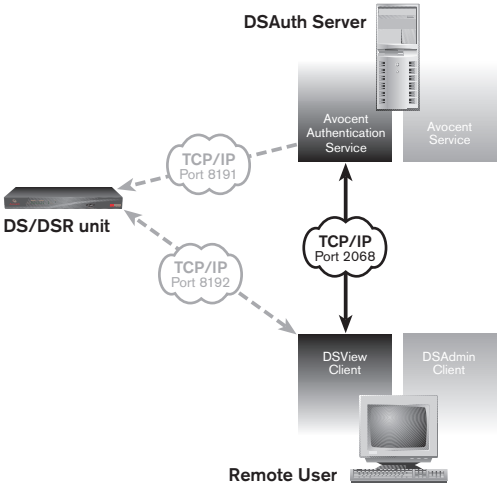
Our Technical Support staff is ready to assist you with any installation or operating problems you encounter with your Avocent product. If a problem should develop, follow the steps below for the fastest possible service:

1. Check the pertinent section of the manual to see if the problem can be resolved by following the procedures outlined.
2. If you are unable to find a resolution, recreate the problem when possible.
3. Call Avocent Technical Support for assistance. To expedite assistance, have this manual available, along with a copy of your invoice giving the date of purchase. DSR Technical Support is available toll free at 888-793-8763.

Appendix D: TCP Ports

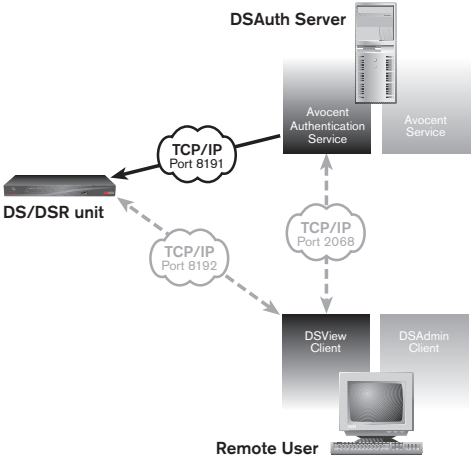
When the DSView client is started the Node Manager will become active. Node Manager will try to establish a SSPI Messenger Class session using TCP/IP over port 2068 to the DSAuthentication Server (Avocent Service). First, Node Manager will use the current NT/2000 cached credentials to establish the session.

If the cached credentials have the proper permissions, the browse list is returned from the DSAuthentication Server over TCP/IP port 2068. Note that the DSView client caches this list. Using the refresh option will update the list from the DSAuthentication Server. If the session is refused using the cached credentials, a popup dialog box will prompt for the proper username and password.

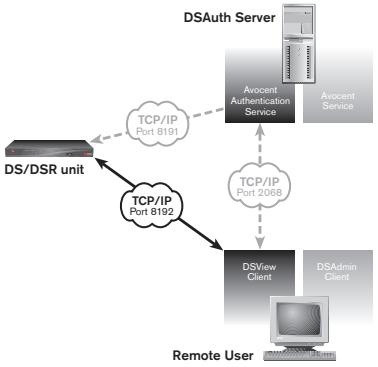


After the browse list is returned to Node Manager, the user can double-click on a specific port to initiate a KVM session with that port on the DS1800. The DSView client contacts the DSAuthentication Server, which checks the permissions on the port again. If the logged user has permissions to the port selected, the DSAuthentication Server will establish a connection to the DS1800 using TCP/IP port 8191. The DSAuthentication Server then tells the DS1800 to listen to port 8192 for a DSView connection.

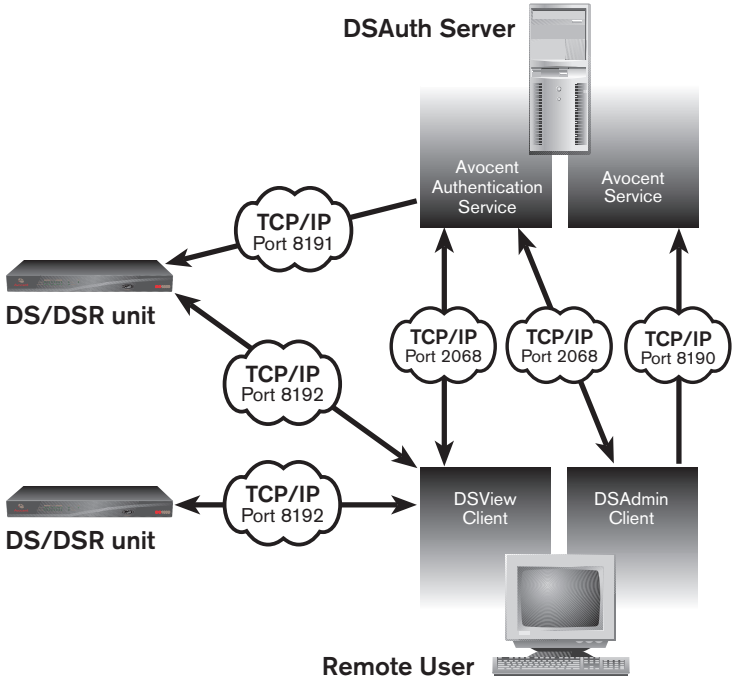
For debugging purposes, the details of this connection can been seen by using the console port to place the DS1800 into debug mode.



The DSView client establishes a TCP/IP session with the DS1800 over the TCP/IP port 8192. The DS1800 verifies with the DSAuthentication Server that the calling DSView client has permission to have a KVM session with the selected port. Then the connection between the DS1800 and the DSAuthentication Server is closed. All communication between the DS1800 and the DSView client takes place over TCP/IP port 8192 until the DSView client closes the session.

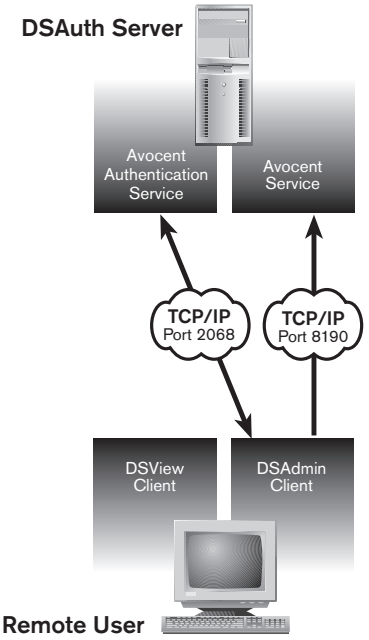


If the DSView user wishes to establish a session with another DS1800 port, the same process is used.

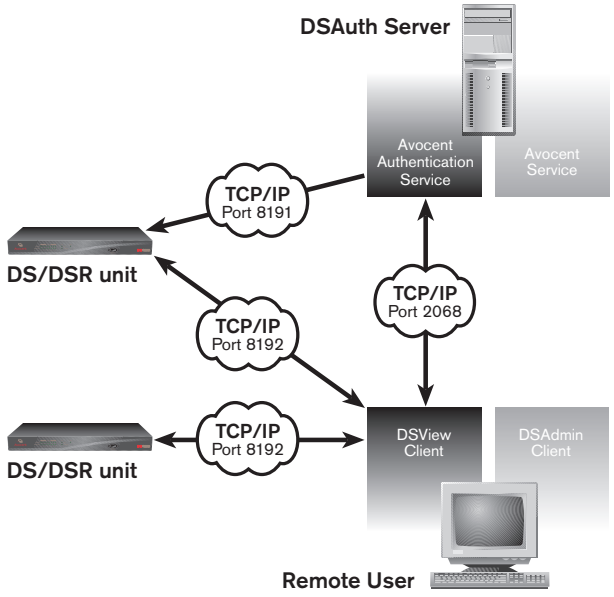


DSAdmin functions similarly to the DSView client. It establishes a connection using TCP/IP port 2068, and uses the same process for authentication and return of the browse list. Changes made to the browse list through DSAdmin are transmitted back to the DSAuthentication Server using TCP/IP port 8190. After the changes are made, DSAdmin refreshes its browse list view over the TCP/IP port 2068 connection.

When the backup Authentication Service is active, it communicates with the Primary Avocent Authentication Service via TCP port 8193. Changes to the topology are copied to and from the Primary over this port.



Full Diagram



LIMITED WARRANTY

Avocent Corporation warrants to the original retail purchaser that this product is and will be free from defects in materials and workmanship for a period of 12 months from the date of purchase.

Additionally, all Avocent products carry an unconditional thirty-day satisfaction guarantee. If, for any reason, you are dissatisfied with the performance of this product, you may return it to the point of purchase for a refund of the purchase price (excluding shipping charges). This guarantee does not apply to special order products, and may not be available through all resellers. During the warranty period, purchaser must promptly call Avocent for a RETURN MATERIALS AUTHORIZATION (RMA) number. Make sure that the RMA number appears on the packing slip, proof of purchase, AND ON THE OUTSIDE OF EACH SHIPPING CARTON. Unauthorized returns or collect shipments will be refused.

Ship prepaid to: Avocent Corporation
4991 Corporate Drive
Huntsville, AL 35805 U.S.A.
Telephone: (256) 430-4000

The above limited warranty is voided by occurrence of any of the following events, upon which the product is provided as is, with all faults, and with all disclaimers of warranty identified below:

1. If non-Avocent approved cabling is attached to the DSR unit. Poorly constructed and miswired cabling can diminish video quality and damage equipment. Avocent manufactured cabling is built to high quality standards utilizing overall braided shield to comply with FCC emission standards, and each cable is individually tested under load.
2. If defect or malfunction was caused by abuse, mishandling, unauthorized repair, or use other than intended.
3. If unauthorized modifications were made to product.
4. If unreported damages occurred in any shipment of the product.
5. If damages were due to or caused by equipment or software not provided by Avocent.
6. If the DSR unit is used with non-grounded or incorrectly polarized AC power.
7. If the product is used in contradiction to any instruction provided by any User Guide or Instruction Sheet provided to you or with the product.
8. If the product is damaged due to power surges, water exposure or act of God including lightning.

EXCEPT AS SPECIFICALLY PROVIDED ABOVE AND TO THE MAXIMUM EXTENT ALLOWED BY LAW, AVOCENT CORPORATION DISCLAIMS ALL WARRANTIES AND CONDITIONS WHETHER EXPRESS, IMPLIED, OR STATUTORY AS TO ANY MATTER WHATSOEVER INCLUDING, WITHOUT LIMITATION, TITLE, NON-INFINGEMENT, CONDITION, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR OR INTENDED PURPOSE.

EXCEPT AS EXPRESSLY PROVIDED ABOVE AND TO THE MAXIMUM EXTENT ALLOWED BY LAW, AVOCENT CORPORATION SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION, LOSS OF PROFIT, LOSS OF BUSINESS, LOSS OF INFORMATION, FINANCIAL LOSS, PERSONAL INJURY, LOSS OF PRIVACY OR NEGLIGENCE) WHICH MAY BE CAUSED BY OR RELATED TO, DIRECTLY OR INDIRECTLY, THE USE OF A PRODUCT OR SERVICE, THE INABILITY TO USE A PRODUCT OR SERVICE, INADEQUACY OF A PRODUCT OR SERVICE FOR ANY PURPOSE OR USE THEREOF OR BY ANY DEFECT OR DEFICIENCY THEREIN EVEN IF CYBEX COMPUTER PRODUCTS CORPORATION OR AN AUTHORIZED AVOCENT DEALER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR LOSSES.

©2001 Avocent Corporation. All rights reserved.

Avocent
The Power of Being There™

For Technical Support:

Email: support@avocent.com
www.avocent.com

Avocent Corporation
4991 Corporate Drive
Huntsville, Alabama 35805-6201 USA
Tel: +1 256 430 4000
Fax: +1 256 430 4031

Avocent International Ltd.
Avocent House, Shannon Free Zone
Shannon, County Clare, Ireland
Tel: +353 61 715 292
Fax: +353 61 471 871

Avocent Asia Pacific
Singapore Branch Office
100 Tras Street, #15-01/2
Amara Corporate Tower
Singapore 079027
Tel: +65 227 3773
Fax: +65 223 9155

Avocent Germany
Gottlieb-Daimler - Straße 2-4
D-33803 Steinhagen
Germany
Tel: +49 5204 9134 0
Fax: +49 5204 9134 99

Avocent Canada
50 Mural Street, Unit 5
Richmond Hill, Ontario
L4B 1E4 Canada
Tel: +1 877 992 9239
Fax: +1 877 524 2985

590-192-001 Rev. A